



ANALYSIS OF RURAL WOMEN PARTICIPATION IN DECISION-MAKING IN AGRICULTURAL SECTOR AND FACTORS AFFECTING IT: A CASE STUDY OF JIND DISTRICT OF HARYANA STATE

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ABSTRACT

Women are the main contributing force in the Indian economy as well as in agricultural sector. Women participation has been very high in all types of farm activities. Women do more work as compared to their counterpart but their participation in decision making related to farm activities is very low. Women active participation in decision making is considered essential for rapid agricultural growth in rural area. But many social and economic factors affect the women participation in agricultural sector in rural area. For which, a sample of 300 farm women from two blocks of district Jind were selected through random sampling technique. To analyze the factors affecting women contribution in agricultural sector, multiple regression model has been used. The selected important factors variables age, education, income, farm size, husband income, family size and number of male workers in the family played a statistically significant role in decision-making. It can be concluded that economic factor play a very important role in women participation in agricultural sector.

KEY WORDS: Decision making, participation, factors, agricultural sector, contribution.

Introduction:

Agriculture is an engine of growth of poverty reduction in developing countries where it is the main occupation of the poor segment of the society. A woman makes essential contribution to the agricultural sector and rural economy in developing countries. Agriculture in India contributes about 13 per cent of GDP and is predominately a female activity. The dairy and animal husbandry sector of agriculture is totally dependent upon the women workforce. All most all the women in rural area can be considered as farmers in some senses as almost all of women are directly or indirectly engaged in agricultural activities such as agricultural labourer, working at the own farm and in dairying and animal husbandry etc. As majority of the agricultural works in the country comprises of the women, their role in the decision making in different agricultural activities need to be properly looked in to. Decision – making is a basic process that underlines all functions of the family and resource management. Rural women share abundant responsibilities and perform almost all duties in running the family, maintaining the households and attending widely various farm activities in rural areas. In spite of performing all these activities, her involvement in agricultural decision making process specially crop production and money matters is very low as compared to men in rural area (Raju and Singh: 1991). Women play an important role in control and supervision of farm production, horticulture, livestock and other productive work in agricultural sector (Censes; 2011). Despite women's critical contribution to the family income through productive activities, the recognition is not given to the women because of many social and economic factors which ultimately effect the women's contribution in agricultural sector. The overview of some of the studies in India showed considerable variation in women's involvement actively in decision making process in different parts of the country, especially in rural area. The growing state like Punjab, Haryana and Uttar Pradesh show positive and slightly active role of women in decision making process in rural area but in low income states, the pattern of participation in decision is traditional where head of the family make all the decision related to family as well as agricultural related activities. In rural area, many factors like economic conditions of the family, age, education, farm size, husband income, family size and number of male workers in the family and their employment status effects the involvement of women in decision making. Besides this, women's involvement becomes negligible where the decisions increase in complexity in rural area due to illiteracy of women (Ahamed, Tuteja and Harun: 2009). So keeping in view the above facts, an attempt has been made to explore the extent of rural women's participation in decision making in different activities in agricultural and livestock management in district Jind of Haryana state and also explore the effects of selected main factors in decision making of the women's participation in the study area.

Specific Objectives of the Study:

1. To analyze the role of women in decision making in agricultural sector
2. To access the effect of selected factors on rural women contribution in agricultural sector

Data and Methodology:

The study has been conducted in district Jind of Haryana State. Out of seven blocks, two blocks Narwana and Uchana were selected randomly vize.. from each block, 3 villages from each block have been again selected randomly. So,

the villages Dhakal, Sacha Khera and Esmilpur have been selected from Narwana block and villages Alipura, Karsindu and Dhumarkha have been selected from block Uchana of district Jind and 50 women of age above 18 from each village have been selected randomly for collecting the information. So a sample of 300 respondents has been interviewed for the data collection. The study has used both quantitative and qualitative data, collected through well structured questionnaire. To assess the effect of important factors in decision making the factors i.e, Age, Education, Income, Farm size, Husband income, Number of male workers in the household and Family size have been selected. Average and Percentage method has been used for analyze the decision making power of women in agricultural sector.

Estimation Technique: Ordinary least square (OLS) multiple regression method has been used to examine the effect of selected factors on women participation in agricultural sector. A detail of variables and estimated model is as under:

$$WP(Y) = B_0 + B_1 X_1 + B_2 X_2 + B_3 X_3 + B_4 X_4 + B_5 X_5 + \dots \dots B_n X_n + U$$

$WP(Y)$ = Women participation

B_0 = Intercept

X_1 = Age

X_2 = Education

X_3 = Income

X_4 = Farm Size

X_5 = Husband occupation

X_6 = No of male workers in the family

X_7 = Family Size

U = Error Term or residual value

Results and Discussion:

The furnished results related to decision making power of rural women in respect of the crop production activities, expenditure activities, buying and selling activities and regression analyses with respect to effect of selected factors on women participation in agricultural sector have been analyzed and presented through following heads:

Women Participation in Decision Related to Crop Production Activities:- The results regarding to women participation in decision related to crop production process are presented in table 1.

Women's participation in decision related to crop production activities has been presented in Table 1. The table shows that most of the decisions regarding to crop production activities have been taken by men in agricultural sector. The figures present a very depressed picture of women related to the decision making power of women in Jind district. In case of area under different crops, only 1.3 per cent sole decision of women was found where as for using new implements for production, 0.3 per cent, use of manures fertilizers and plant protection method, 2.3 per cent and selection of variety of seeds 2.3 per cent decision has been taken independently by the women. In method of harvesting, cutting, and picking, men are consulted with their wives in taking decision in agricultural sector. But in decision making process related to harvesting cutting and picking and method of stor-

age, 22.3 per cent decision has been taken by jointly in agricultural sector. 74.4 per cent women have say no in the decision regarding to harvesting, cutting and picking of farm produced in agricultural sector. These results had been supported by the studies conducted Das (2015) and Sharma et. al (2013). During crop production process, women play a pivotal role at farm but it is unfortunate that their role and contribution has not been recognized. In addition to this, due to low education level and lack of information about technologies rural women face relative isolation from public life. So, there is needed to take some effective policy to increase the role of women in decision making in agricultural sector

Table: 1

Distribution of the Respondents according to their Participation in Decision Related to Crop Production Activities in Agricultural Sector

| Decision Related to | Sole decision maker | Join decision maker | Nil involvement | Total |
|--|---------------------|---------------------|-----------------|----------------|
| Area under different crops | 4 (1.3) | 32 (10.7) | 264 (88.0) | 300 (100.0) |
| New implements to be used for production | 1 (0.3) | 28 (9.4) | 271 (90.3) | 300 (100.0) |
| Selection of seeds Variety & Cropping pattern | 7 (2.3) | 37 (12.3) | 256 (85.4) | 300 (100.0) |
| Use of Manure, fertilizer & plants protection method | 12 (4.0) | 51 (17.0) | 237 (79.0) | 300 (100.0) |
| Method of Intercultural operation | 13 (4.3) | 30 (10.0) | 257 (85.7) | 300 (100.0) |
| Procedure of harvesting, cutting and picking | 10 (3.3) | 67 (22.3) | 223 (74.4) | 300 (100.0) |
| Method and Storage of farm produce | 36 (12.0) | 102 (34.0) | 162 (54.0) | 300 (100.0) |
| Marketing of farm produce | 5 (1.7) | 15 (5.0) | 280 (93.3) | 300 (100.0) |

Source: Field Survey

Figure in parenthesis denote percentage

Women Participation in Decision Related to Buying and Selling Activities: - The furnished results related to women participation in decision related to buying and selling activities in agricultural sector are presented in Table 2.

Table: 2

Extent of Respondents Involvement in Farm Decisions: Buying and Selling Activities

| Decision Related to | Sole decision maker | Join decision maker | Nil involvement | Total |
|---|---------------------|---------------------|-----------------|----------------|
| Purchase and sale of land | 5 (1.6) | 89 (29.7) | 206 (68.7) | 300 (100.0) |
| Purchase and Sale of Machines | 3 (1.0) | 22 (7.4) | 275 (91.6) | 300 (100.0) |
| Purchase of insecticides and weedicides | 4 (1.3) | 19 (6.3) | 277 (92.4) | 300 (100.0) |

Table: 3

Pair Wise Co-efficient of Correlation Matrix of Independent Variables

| Variables | Age | Education | Family income | Farm Size | Husband income | No of male workers in the family | Family size | Mean | SD |
|----------------|-------|-----------|---------------|-----------|----------------|----------------------------------|-------------|-------|-------|
| Age | 1.00 | | | | | | | 35.99 | 10.80 |
| Education | -0.11 | 1.00 | | | | | | 7.69 | 5.05 |
| Family income | 0.13 | -0.09 | 1.00 | | | | | 5.42 | 2.32 |
| Farm Size | 0.05 | 0.44* | 0.37* | 1.00 | | | | 6.52 | 4.51 |
| Husband income | 0.16 | 0.18 | 0.19 | 0.13 | 1.00 | | | 1.69 | 1.32 |
| Marital status | 0.13 | 0.09 | 0.26* | 0.07 | 0.03 | 1.00 | | 1.87 | .84 |
| Family size | -0.11 | -0.20 | -0.10 | -0.19 | -0.09 | -0.53* | 1.00 | 5.43 | 1.47 |

Correlation and Descriptive Statistics (Correlation Matrix)

Note: N-300; correlations greater than 0.26 are statistically significant ($p < 0.5$)

The Table 3 shows that there is no perfect pair wise correlation among all explanatory variables except farm size and education (0.44) per cent, family income and farm size (0.37) per cent, number of male worker and family income (0.26) per cent and family size and number of male workers in the family (0.53) per cent, the result shows that there is no problem of multicollinearity with the regression model. Most of the variables used in model have not exactly correlated. The table shows that the mean value of age is 35.9, with maximum 58 years of age and minimum 16 years whereas; Standard deviation, the deviation of age from its mean is 10.8. The mean value of women education is 7.69 with 5.05 SD. Maximum years

| | | | | |
|--------------------------------------|---------------|---------------|---------------|----------------|
| Purchase of seeds | 2 (0.7) | 8 (2.7) | 290 (96.6) | 300 (100.0) |
| Purchase of implements | 6 (2.0) | 31 (10.3) | 263 (86.7) | 300 (100.0) |
| Purchase of manure and fertilizers | 2 (0.6) | 9 (3.0) | 289 (93.4) | 300 (100.0) |
| Paying wages to labourer | 14 (4.6) | 35 (11.7) | 251 (83.7) | 300 (100.0) |
| Farm credit | 0 (0.0) | 24 (8.0) | 276 (92.0) | 300 (100.0) |
| Purchase and sale of livestock | 18 (6.0) | 232 (77.3) | 50 (16.7) | 300 (100.0) |
| Sailing milk and milk products | 239 (79.7) | 53 (17.6) | 8 (2.7) | 300 (100.0) |
| Purchasing feed for livestock & etc. | 229 (76.3) | 56 (18.7) | 15 (5.0) | 300 (100.0) |

Source: Field Survey

Figure in parenthesis denote percentage

The data presented in Table 2 has been explains the role of women in decision related to buying and sailing activities in agricultural sector in district Jind. The table shows that decision regarding purchase and sale of land has been entirely taken by the male, family head and majority of the respondent has not involved in decision related to purchase and sale of land. Only near about 29.7 per cent respondents were partially involved in taking decision in this activity. More than 91.6 per cent respondents had say no in the decision related to purchase and sale of machine in agricultural sector. It has also been found that only 0.7 per cent of the respondents were taking sole decision about the purchase and sale of seeds in Jind. 2.7 per cent respondents were partially involved in taking decision in this activity. The position of women has once again found very worse as very minimal proportion of women's accepted the fact that they have been able to convert their views into final decision in purchase of manures and fertilizers. The similar results were found by Subita Sharma (2015) Hamed (1998) and Islam (1988). The similar results has been found in taking decision related to the paying wages to labourer, only 4.6 per cent has accepted the fact that they have been able to convert their views into final decision in the District. Once again the role of women in taking decision on farm credit has been very low as only 8 per cent respondents have taken decision jointly in District Jind. These results are also supported by (Ejmbi: 2007) and (Sadaaf: 2004). But in case of buying and sale of livestock, above 77.3 per cent decisions are taken jointly by men and women in the family. Above 77 per cent respondents were involved when major decisions regarding the purchase and sale of milk and milk products and purchasing feed for livestock are take into account. A similar result was found in study of Tuteja Usha (2009). It is suggested on the basis of the results that there is an urgent need to motivate the females to have the accurate knowledge about their technical and legal rights. The high level of education and workshops, extension lectures can work for the betterment of women in the direction of increasing the decision making power of females in the selected region of district Jind.

Effect of Selected Factors on Decision Making of Rural Women in Agricultural Sector:-

To examine the effects of selected variables on women contribution in agricultural sector, regression analysis has been used. The findings are presented in following Tables.

of education has 16 years and minimum zero value of education. The mean value of family income 5.42 mean with 2.32 SD. Similarly, farm size has a mean value of 6.52. Here maximum value of farm size is 27, with a minimum value of 0, having SD; deviation from its mean value has 4.51. In the same way, husband income has 1.69 values of dispersion from its mean of 1.32 in the series. The mean value of number of male workers in the family has 1.87 with the SD of 0.84. Similarly, the family size has a mean value of 5.4; the deviation from its mean value is 1.47. Here the maximum value of family size is 14 and minimum is 4 in selected sample

Table: 4
Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics | | | | Sig. F change | Durbin Watson |
|-----------|------|----------|-------------------|----------------------------|-------------------|----------|-----|-----|---------------|---------------|
| | | | | | R Square Change | F Change | Df1 | Df2 | | |
| Dimension | .924 | .854 | .838 | 21.22223 | .854 | 55.856 | 7 | 300 | .000 | 1.331 |

Predictors: (constant), Age, Income, Education, Farm Size, Husband income, Family Size, Number of male workers in the family

Dependent variables: Women Participation

In a model summary in Table 4, the R value is used to indicate the strength and direction of the relationship between the variables. The closer the value gets to 1, the stronger the relationship. In this case as shown in model in table, R= 0.924. This means there was an overall strong and positive relationship between the variables. The R-Square in the study has been found to be 0.854. This value indicates that the independent variables can explain 85.4 per cent of the variance in participation of women in agricultural sector.

Table: 5
Analysis of Variance (ANOVA)

| Model | Sum of Squares | Degree of freedom | Mean Square | F | Sig. |
|------------|----------------|-------------------|-------------|--------|-------------------|
| Regression | 176094.680 | 7 | 25156.383 | 55.856 | .001 ^a |
| Residual | 30175.666 | 293 | 450.383 | | |

Predictors: (constant), Age, Income, Education, Farm Size, Husband income, Family Size, Number of male workers in the family

Dependent variables: Women Participation

Analysis of variance was also done to establish the significance of the regression model. At 95 percent confidence interval, a significant value of 0.001 and F – value of 55.856 has been registered as shown in Table 5. The results show that the regression model has a probability of less than 0.001 of giving the wrong prediction. Hence, the result of regression model has used above has a suitable prediction for explaining the factors influencing the participation of women in agricultural sector.

Coefficients of Determination:

In the Table 6, all the predictor variables except family size ($p=0.746$), two variables produced statistically significant results $p<0.05$ (income ($p=0.022$), Farm size ($p=0.019$) and Age ($p=0.001$), Education ($p=0.002$), husband income ($p=0.000$) and number of male workers in the household ($p=0.00$) showed statistically significant results at $p<0.05$.

The equation for the regression model is expressed as:

$$Y = B_0 + B_1 X_1 + B_2 X_2 + B_3 X_3 + B_4 X_4 + B_5 X_5 + B_6 X_6 + B_7 X_7 + E = 238.20 - 0.985X_1 - 2.161X_2 - 4.056X_3 - 1.714X_4 - 15.772X_5 - 16.604X_6 - 2.497X_7$$

From the table 5 it is analyzed that women participation and selected variables have been directly related each another. The coefficients of all predictors are found negative and statistically significant. The largest beta coefficients -0.402 and -0.335 have been found and statistically significant in case of Husband income and Number of male workers in the family. It means that these variables make the strongest unique contribution to explaining the women participation. The coefficient of age has been found negative and statistically significant at 1 per cent level of significance. The value of coefficient is -0.193 which can be

describe as if age is increased by 1 per cent than women participation shall decrease by -0.193 per cent. The results show that the impact of education on rural women participation has found to be negative but statistically significant with negative sign. With higher education, women migrate from agricultural to industrial and services sector for better job opportunities. In the case of income, the results indicated that with the increasing of family income, women participation has been decreased in agricultural sector. Income has a statistically significant contribution in independent variable at 1 per cent level of significance. The result related to farm size explains that the relationship between women participation and farm size found to be statistically significant with beta -0.183. It means that women have been dropping out from agricultural activities with increasing farm size and income in the study area. The t value of family size explains that the variable is not making a significant unique contribution in the prediction of women contribution in agricultural sector. This may be overlapping between other selected variables in the model. The results also explain that the family where the number of male workers has increased the women's participation in agricultural sector has decreased. The results also show that the tolerance value is less than .10 and variance inflation factors above 10; therefore it has not violated the multicollinearity assumptions.

Conclusion:

On the basis of the study, it can be concluded that the women's participation as a planner in the agriculture sector of the district Jind has not recorded up to the mark. Their participation in decision related to crop production activities has been very low as compared to their contribution. The situation has noticed negligible in some area especially related to opting measure to increase production activities. Many social and economic factors affect the women's participation in study area. Age, education and husband income make a strongest and unique contribution to explaining the women contribution in agriculture sector. So, some steps should be taken to upgrade the role of women in decision-making in agriculture sector.

- There should be improvement in women's access to basic economic resources such as land, technical knowledge, credit and agricultural innovations.
- The educated women from the rural area should be involved in the training programme, workshop to motivate the rural agricultural women for enhancing their role in participation on the farm
- Empowering women for participation in agricultural decision making and leadership in district Jind represent the most appropriate and effective way forward them.
- Support system of women farmers within holistic gender- sensitive framework are urgently needed to form a policy development and implementation agenda. Women must be directly involved in the development and implementation of the new technology.

Table: 6
Coefficients of Determination of Regression Model

| Model | Unstandardized Coefficients | | Standardized Coefficients | T. value | P. value(Sig) | Partial Correlation | Collinearity Statistics | |
|---|-----------------------------|-----------|---------------------------|----------|---------------|---------------------|-------------------------|-------|
| | B | Std Error | Beta | | | | Tolerance | VIF |
| (Constant) | 238.205 | 14.479 | | 16.452 | .000 | | | |
| Age | -0.985 | 0.278 | -0.193* | -3.540 | .001 | -0.397 | 0.733 | 1.364 |
| Education | -2.161 | 0.625 | -0.213* | -3.455 | .002 | -0.389 | 0.574 | 1.743 |
| Income | -4.056 | 0.000 | -0.127** | -2.343 | .022 | -0.275 | 0.741 | 1.350 |
| Farm size | -1.714 | 0.730 | -0.183** | -2.350 | .019 | -0.276 | 0.358 | 2.793 |
| Husband income | -15.772 | 2.690 | -0.402* | -5.863 | .000 | -0.582 | 0.465 | 2.152 |
| Number of male workers in the Household | -16.604 | 3.834 | -0.335* | -4.331 | .000 | -0.468 | 0.365 | 2.741 |
| Family Size | -2.497 | 7.669 | -0.024 | -.326 | .746 | -0.040 | 0.408 | 2.448 |

Dependent variable: Women Participation

*1 per cent level of significance

** 5 per cent level of significance

REFERENCES:

1. Beohar, B, et al. "Women contribution in paddy cultivation: A case study of a village of Chattisgarh Region of Madhya Pradesh." *J. Agricultural Social Science*, vol.6, 2008, pp 53-56.
2. Bhati, J. and P Singh. "Women Contribution to Agricultural Economy in Hill Region of North- West India." *Economic and Political Weekly*, vol. 22, no.17. 1987, pp. 19-25.
3. Farhana, Nosheen, et al. "Exploring Gender Involvement in Agricultural Decision Making." *Journal of agri. Sci.*, vol. 45, no.3, 2008, pp. 78.
4. Jamali, Khalida. "The Role of Rural Women in Agriculture and Its Allied Field: A Case Study of Pakistan." *European Journal of Social Sciences*, vol.7, 2009, pp. 34.
5. Tuteja, Usha. "Contribution of Female Agricultural Workers in Family Income and their Status in Haryana." *Ind. Jn. of Eco.*, Vol.55, no. 2, 2000, pp. 136.
6. Tuteja, Usha. "Female Employment in Agriculture in Haryana." *Agriculture Economic Research Centre*, 1997, University of Delhi, Delhi.
7. R. and G Yasmeen. "Contribution of Pakistani Women in Agriculture Productivity and Constraints." *Sarhad J. Agri.*, vol. 27, no. 4, 2011, pp. 637-643.
8. Butt, T. M, et al. "Man Water and economy: "Role of Rural women in Agricultural Development and Their Constraints." *J. Agri. Soc. Sci.*, Vol. 6, no 3, 2010, pp. 53-56.
9. Chaudhary, Samishtha. "Invisible Activities of Rural Women" *kurukshetra*, Vol. 52, no. 9, 2004.
10. Gill, JK, Et al. "Women in Agriculture: Impact of their Participation on the home Environment." *International Journal of Rural Studies*, vol. 14, no 2, 2007, pp. 1-7.
11. Ogato, G, et al. "Exploring Gender Involvement in Agricultural Decision Making." *J. Agri. Sci.*, Vol. 45, no.3, 2008.
12. Humera , Amin, et al. "Gender and Development: Role of Rural Women in Livestock Production In Pakistan." *J. Agri. Sci.*, Vol. 47. no 1, 2010, pp. 32-36.
13. Rajan, S. "Growth of Rural Non- Farm Employment in Uttar Pradesh: Some Reflection from Recent Data." *Economic Political Weekly*, Vol. 44, no 4, 2009.
14. Srivastva, R. "Education, Skills and the Emerging Labour Market in India." *The Indian Journal of Labour Economics*, Vol. 51, no. 4, 2008, pp. 759-82.